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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,427	02/12/2004	Thomas Poschmann	510.1096	4328
23280 7590 09/11/2007 DAVIDSON, DAVIDSON & KAPPEL, LLC 485 SEVENTH AVENUE, 14TH FLOOR NEW YORK, NY 10018			EXAMINER WALKER, KEITH D	
			ART UNIT 1745	PAPER NUMBER
			MAIL DATE 09/11/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/777,427	<b>Applicant(s)</b> POSCHMANN ET AL.	
	<b>Examiner</b> Keith Walker	<b>Art Unit</b> 1745	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 May 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 3-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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## **DETAILED ACTION**

### ***Election/Restriction***

Applicant's election of Claims 1 & 2 in the reply filed on 5/29/07 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### ***Priority***

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

### ***Information Disclosure Statement***

The information disclosure statement filed on 2/12/04 has been placed in the application file and the information referred to therein has been considered as to the merits.

### ***Drawings***

The drawings received on 2/12/04 are acceptable for examination purposes.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 1 & 2 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for abnormal operation being the bursting of the

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diaphragm, does not reasonably provide enablement for any abnormal operation. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims. The instant specification illustrates the method of controlling a fuel cell when the diaphragm in the reformer unit bursts; however, the specification does not describe to one of ordinary skill in the art how to operate the fuel cell when any abnormal operating condition occurs, such as the fuel cell flooding or the catalysts becoming contaminated. The specification does not provide the proper direction to operate the fuel cell when any abnormal condition occurs. The only direction provided is directed to an imbalance in pressure across the fuel cell membrane when the reformer membrane bursts. The claimed invention is of a broader scope than is described or taught in the specification.

Claims depending from claims rejected under 35 USC 112, first paragraph are also rejected for the same.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. Claims 1 & 2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The meets and bounds of claim 1 are unclear because a broad limitation is followed by a narrow limitation in the same claim. The limitation "abnormal operation including a bursting of the diaphragm" is unclear since it

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is unknown if the bursting of the diaphragm is a necessary condition to be considered an abnormal operation or if the bursting of the diaphragm is just illustrative. If the condition is merely illustrative then what other conditions are considered as having the same "abnormal operation" condition? What are the parameters for an "abnormal condition"?

3. Claim 1 recites the limitation "the fluid" in line 7. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 6,063,515 (Epp).

Epp teaches a method of controlling a fuel cell system where hydrogen-containing gas is produced by a reformer. The hydrogen-containing gas is then sent to a diaphragm module that selective separates out the hydrogen, which is used for the

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fuel cell. The reformer gas is kept at a higher pressure than the separated hydrogen gas (Abstract; Figs. 1 & 3; 2:30-40, 3:45-67, 7:50-8:5). If the hydrogen separation diaphragm breaks, a pressure differential between the anode and the cathode side of the fuel cell is held below a predefined value.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,063,515 (Epp).

The teachings of Epp as discussed above are incorporated herein.

Epp is silent to keeping the pressure differential below 500 mbar.

The operating pressure of the oxidant and the fuel supplied to the fuel cell is between 40 and 80 psi (10:30-55). A pressure sensor and purge valve is located in the anode fuel supply loop and the pressure sensor is used to maintain the hydrogen pressure between 40 and 80 psi. It is well known in the art to keep the pressure difference between the anode side and cathode side below tolerance levels dependent upon the electrolytic membrane used for the fuel cell. If the pressure difference across the membrane becomes greater than the tolerance level the membrane could develop holes or tears and either decrease the performance of the fuel cell or possibly impede

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the operation of the fuel cell. Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to utilize the pressure sensor and vent of Epp to keep the pressure differential between the anode and the cathode under 500 mbar in order to keep the fuel cell operating efficiently.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith Walker whose telephone number is 571-272-3458. The examiner can normally be reached on Mon. - Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

K. Walker

**MARK RUTHKOSKY**  
**PRIMARY EXAMINER**

*Mark Ruthkosky*  
*9/8/07*